CLAIMS

What is claimed is:

1.   A method of load balancing between a plurality of routers, the method comprising:

receiving a packet at a router from a source host to be forwarded via a gateway to a destination host;

applying an algorithm at the router to select a gateway for the source host for packets destined to the destination host; and

sending an ICMP redirect message from the router to the source host to reset the gateway of the source host for packets destined to the destination host.

2.   The method of claim 1, wherein the algorithm comprises a pseudo-random algorithm.

3.   The method of claim 1, wherein the algorithm selects the next default gateway using a round robin type selection process.

4.   The method of claim 1, wherein the algorithm comprises a hash function,, wherein an output of the hash function returns an index of a router to be used to route subsequent packets with a same hash value.

5.   The method of claim 4, wherein the hash function is a function of any combination of the IP addresses of the destination and source hosts of the packet.

6.   The method of claim 1, wherein the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers.

7.   An apparatus for routing packets, the apparatus comprising:

a receiver configured to receive a packet from a source host to be forward to a destination host;

9

a selection module configured to apply an algorithm to select a next gateway of the source host for packets destined to the destination host; and

a transmission module configured to send an ICMP redirect message to the source host to reset a current gateway of the source host for packets destined to the destination host.

8.   The apparatus of claim 7, wherein the selection module comprises a pseudo-random number generator.

9.   The apparatus of claim 7, wherein the selection module applies a round-robin type algorithm to select the next gateway.

10.   The apparatus of claim 7, wherein the selection module applies a hash function.

11.   The apparatus of claim 10, wherein the hash function is a function of the source IP address.

12.   The apparatus of claim 10, wherein the hash function is a function of a combination of the source and destination IP addresses.

13.   The apparatus of claim 7, wherein the apparatus is configured to communicate load levels to and receive load levels from other routing apparatus, and wherein the selection module applies a load-based algorithm.

14.   The apparatus of claim 13, wherein the load-based algorithm comprises a weighted hash algorithm.

15.   The apparatus of claim 13, wherein the load-based algorithm comprises a weighted round robin algorithm.

16. The apparatus of claim 13, wherein the load-based algorithm comprises a pseudo-random algorithm.

17. A method of load balancing between a plurality of routers, the method
comprising:

receiving an address resolution protocol (ARP) request at the plurality of routers from a requesting host from a source IP address in relation to a destination IP address;

applying an algorithm at each router to determine which single router is to respond to the request; and

sending an ARP reply from the responding router to the requesting host.

18. The method of claim 17, further comprising forwarding a packet from the source IP address to the destination IP address.

19. The method of claim 17, wherein the algorithm comprises a hash function.

20. The method of claim 19, wherein the hash function is a function of the source and destination IP addresses.

21. The method of claim 17, wherein the algorithm determines the responding router using a round robin type selection process.

22. The method of claim 17, wherein the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers.

23. A system of load balancing between a plurality of routers, the system
comprising:

means for receiving an address resolution protocol (ARP) request at the plurality of routers from a requesting host from a source IP address in relation to a destination IP address;

means for applying an algorithm at each router to determine which single router is to respond to the request; and

11

means for sending an ARP reply from the responding router to the requesting host.